

Notice of Allowability

Application No.

10/796,713

Examiner

Kevin M. Bernatz

Applicant(s)

MIYAKE ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to interview of 9-19-06.
2. ☒ The allowed claim(s) is/are 1,2,4-6 and 13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 20060927.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Examiner's Amendment

1. An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.
2. Authorization for this Examiner's amendment was given in a telephone interview with Mr. Patrick Burns on September 19, 2006.

The application has been amended as follows:

- Claim 1, line 6, after "FeCo", the following phrase was inserted: ", wherein a crystal structure of said plated layer has X-ray diffraction peaks of bcc (110) and bcc (200), a ratio of diffracted intensity of bcc (110) and bcc (200) is $I_{110}/I_{200} < 0.8$, a composition of said plated layer is indicated as Fe_xCo_{1-x} ($50 \leq x \leq 80$ wt%), a saturation magnetic flux density (B_s) is $B_s \geq 2.25$ T, and a coercive force (H_c) in a direction of a hard axis is $H_c \leq 600$ A/m";
- Claim 2, lines 3 – 4: the phrase ", and ratio of diffracted intensity of bcc (110) and bcc (200) is $I_{110}/I_{200} < 0.8$ " was deleted;
- Claim 3 was deleted; and
- Claim 13, line 12, after "FeCo", the following phrase was inserted: ", wherein a crystal structure of said plated layer has X-ray diffraction peaks of bcc (110) and bcc (200), a ratio of diffracted intensity of bcc (110) and bcc (200) is $I_{110}/I_{200} < 0.8$, a composition of said plated layer is indicated as Fe_xCo_{1-x} (50

$\leq x \leq 80$ wt%), a saturation magnetic flux density (B_s) is $B_s \geq 2.25$ T, and a coercive force (H_c) in a direction of a hard axis is $H_c \leq 600$ A/m".

Reasons for Allowance

3. The present claims are deemed allowable over the references of record since the references of record fail to disclose or render obvious the unexpected results observed by applicants for the claimed structure.

While the prior art of record disclose plated FeCo layers on composite base layers, the prior art of record fails to teach or render obvious the unexpected improvement in the combined properties of low H_c and high B_s observed by applicants when insuring that the plated layer is formed of a FeCo alloy meeting the claimed composition and I110/I200 limitations. Specifically, the Examiner notes that Kawasaki et al. ('757 B2) disclose H_c values greater than 600 A/m (*Figure 10*).

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Examiner's Comments

5. In order to better clarify the record, the examiner wishes to point out two additional references that are directed to similar, but patentably distinct, inventions. Kawasaki et al. (U.S. Patent App. No. 2004/0053077 A1) is directed to an FeCo film

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possessing improved properties, but fails to teach or render obvious the combination including a coercivity of 600 A/m or less (*Figure 5, where 600 A/m = ~7.5 Oe*).

Yamaguchi et al. (U.S. Patent No. 7,101,633 B2) disclose a FeCo alloy possessing improved properties, but fails to teach or render obvious the combination including a Bs of at least 2.25 T, though they do disclose coercivity values of 600 A/m or less (*Figures 6 and 7 and Table 8*).

6. The Examiner notes that the claim designator on claim 13 was improper (*it should have read "Currently Amended"*). However, given that the case is now allowed and claim 13 has been amended by Examiner's amendment, the Examiner deems that this issue is moot and is merely recited for completeness.

Conclusion

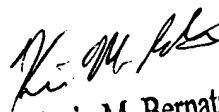
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB
September 26, 2006


Kevin M. Bernatz, PhD
Primary Examiner